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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/053,554	01/24/2002	Takeshi Takizawa	Q68228	3319

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EXAMINER

PATIDAR, JAY M

ART UNIT	PAPER NUMBER
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2862

DATE MAILED: 04/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/053,554	Applicant(s) TAKIZAWA ET AL.	
	Examiner Jay M. Patidar	Art Unit 2862	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 January 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 7-24, 29, 30 and 32-40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 7-24, 29, 30 and 32-40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

1. This communication is in response to applicant's amendment filed on January 22, 2004.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4,7-24,29-30,32-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over French.

French discloses a wheel rotation detecting device with a rolling bearing unit; a stationary ring; a rotary ring; a plurality of rolling elements; an encoder; a plurality of sensing elements including a first sensor for temperature measuring and a second sensor for detecting vibration etc. (Note fig. 8, Col. 1, lines 52+). French does not explicitly disclose that the holder is made of non-magnetic material. However, French discloses at lines 27-42, Col. 5 that "All three sensors 110, 112 and 114 are retained in the hollow shank 104 of the module B in the proper orientation with a potting compound. On the other hand, the

shank 104 could be injection molded with the sensors 110, 112 and 114 embedded in it, or it could have machined recesses for receiving the sensors 110, 112 and 114." French inherently discloses that the case is of non-magnetic material. The case can not be a magnetic material since sensor 110 is a magnetic field sensor and artisan skilled in the art know that the case should be made from non-magnetic material so that it would not interfere with the sensors' performance. Furthermore, it is very well known in the magnetic field sensing art to use synthetic resin or just molded resin for supporting sensing elements (note references on PTO form 892) to make sensing elements integrated, prevent vibrations or from external environment. Consequently, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of French to support sensing elements in the non-magnetic material case or synthetic resin to make the device more sturdy thus enhancing the reliability and sensitivity of the device.

As to claims 29-30, French does not explicitly disclose the vibration or acceleration sensors being used to detect vibrations/accelerations in two or three directions. However, French discloses the use of the vibration/acceleration sensor. One skilled in the art base on the desirability can use two or three perpendicular vibration/acceleration sensors to detect vibrations/accelerations in two/three directions i.e. thereby incorporating at least two/three such sensors

arranged at known relative directions towards each other, and preferably perpendicularly to each other (as evidenced by US 4,503,351, WO 00/51869).

As to claims 16,17,19-20,33-35,37-39, French discloses an abnormality determination means by comparing the output with the reference value (Col. 8, lines 9+). One skilled in the art would also compare the signals from the sensors to detect abnormality. This is also considered a common approach in the related art (Note JP 6-117968).

As to claim 36, the use of an encoder with N and S poles with a non-magnetic area between them is old and common in the art. Ordinary skilled in the art can either use N-S pole encoder or a gear type encoder.

3. Applicant's arguments filed on January 22, 2004 have been fully considered but they are not persuasive.

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

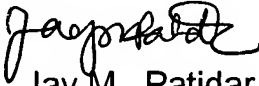
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory

action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jay M. Patidar whose telephone number is 703-308-6723. The examiner can normally be reached on M-Thur 7:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nancy Le can be reached on 703-308-0750. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Jay M. Patidar
Primary Examiner
Art Unit 2862

April 14, 2004